



**MISSOURI DEPARTMENT OF TRANSPORTATION
MATERIALS ENGINEERING
Jefferson City, Missouri**

**Test Method
MoDOT T53
DETERMINATION OF MOISTURE CONTENT
OF BITUMINOUS MIXTURES**

1.0 SCOPE.

- 1.1** This test method describes a procedure for determining moisture content of bituminous mixtures.

2.0 APPARATUS.

- 2.1** Oven capable of maintaining constant temperature of 375 ± 10 F.
- 2.2** One gallon can with friction fit lid.
- 2.3** Square pointed shovel or hand scoop.
- 2.4** Scales accurate to 1 gram.

3.0 PROCEDURE.

- 3.1** Obtain the weight of the gallon can and lid.
- 3.2** Obtain the sample. The sample of bituminous mixture for determining moisture content for specification compliance is to be taken before any compaction. Take a representative sample and fill the tared gallon can approximately half full. Place the lid on the can and seal.
- 3.3** Weigh the can and sample to the nearest 1 gram with the lid in place.
- 3.4** Remove the lid and place the can containing the sample and the lid in the preheated oven at 375 ± 10 F.
- 3.5** After approximately 3 hours, remove the sample from the oven and weigh the sample with lid to the nearest 1 gram.



3.6 Return the sample to the oven for 15 minutes, then remove and reweigh the sample with lid to the nearest 1 gram. If this weight is within 1 gram of the weight obtained in Sec 3.5, use this weight to calculate the percent moisture in the mixture. If this weight is not within 1 gram of that obtained in Sec 3.5, return the sample and lid to the oven and repeat this procedure every 15 minutes until the weight obtained is within 1 gram of the weight obtained after the prior 15 minute heating period. (A constant weight is usually achieved after 4 hours at 375 F.)

4.0 CALCULATION.

Calculate the percent moisture as follows:

$$\% \text{ Moisture} = \frac{(W_w - D_w) \times 100}{D_w}$$

Where:

W_w = Total wet weight of the sample and can with lid minus the tare weight of can and lid.

D_w = Total dry weight of the sample and can with lid minus the tare weight of the can and lid.

5.0 REPORT.

5.1 Report the percent moisture in the mixture to the nearest 0.1 percent. Report the moisture on the plant inspector's daily report.

